Communicable Disease Report

Hawai'i Department of Health
Communicable Disease Division

http://www.state.hi.us/doh/resource/comm_dis/cdr.html **March/April 2004**

A Leptospirosis Epidemic?

Sharp Increase in Incidence

From January through April 21, 2004, 21 cases of leptospirosis have been diagnosed in people exposed in Hawai`i. This compares with four cases in 2003 and 36 cases for the whole year. Historically two-thirds of leptospirosis cases in the state occur during the second half of the year, so the number of cases diagnosed in 2004 to date is alarming in this normally low incidence period.

Geographic Distribution

Thirteen cases have been from the Big Island, including the fatal case in January who was exposed in Waipio valley and died on the mainland of a fulminant course. There have been four cases from O`ahu, including a military case exposed outside the state. Three have been from Kaua`i and one from Maui. The geographic pattern follows the historic pattern of the Big Island reporting the most cases, while Kaua`i reports the highest rates. Typically, most cases occur in windward areas where rainfall levels are high.

More residents have been tested this year for the disease. To date, 180 people have been evaluated for leptospirosis, as compared with 115 through the same date in 2003.

Rainfall: A Risk Factor?

The increased incidence of the disease may be attributed to higher levels of rainfall this winter. Drought conditions have prevailed over the past few years. If the incidence continues at the present rate, 2004 will be a record year for leptospirosis in Hawai`i. Previously the highest annual case total was 72 in 1997.

Diagnosis

Primary care providers are encouraged to take careful exposure histories for the three week period prior to illness onset when confronted by patients with flu-like symptoms. Any fresh water or rural environmental exposure especially with the presence of a skin wound should increase suspicion of the disease.

Diagnosis is by serology or culture. Serological testing is the most sensitive diagnostic method. Paired samples drawn two weeks apart are required to detect recent infection. The Department of Health conducts a screening IgM dot-ELISA test to detect recent infection. Confirmatory microscopic agglutination testing (MAT) is conducted by the Centers for Disease Control and Prevention in Atlanta. Blood cultures in EMJH semi-solid media may provide the most rapid confirmation; although at best, the sensitivity of blood culture is about 45%.[1] Urine culture sensitivity is very low and is not recommended.

MAT Testing

Editor's Note: *The DOH Laboratories Division has been developing expertise in conducting*

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Leptospirosis

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the confirmatory serologic test for leptospirosis.

The microscopic agglutination test is labor-intensive and utilizes 16 live antigens representing the various serovars present in the environment. The Kaua`i District Health Laboratory has developed expertise in running this test. MAT testing is now in the final stages of development. An announcement will be forthcoming when MAT will be available for clinical use. This will enable more rapid confirmation of the disease.

REFERENCE.
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Submitted by David M. Sasaki, D.V.M., M.P.H., Veterinary Medical Officer, Disease Outbreak and Control Division.

Military Quarantines: Invasive Species and Disease Prevention

From the time when the first sailor traveled from landmass to landmass by sea for exploration he has taken various animals and plant species with him, often unintentionally. He has transported diseases to lands and people who were naïve to organisms that resulted in cataclysmic epidemics. Some of these diseases and animals, such as plague and the black rat, have altered the course of history.

Preventing Introduction of Alien Species

Armed with the knowledge of the effect that invasive species and diseases have on lands and their native flora and fauna, we face a great challenge to prevent further introduction of these alien invaders into new areas. The United States Navy is forever vigilant to do its part in preventing the spread of invasive species. Numerous programs are in place governed by specific regulations, instructions or agreements. The overall Department of Defense instruction is a joint service instruction named "Medical Service Quarantine of the Armed Forces." This instruction details all of the basic requirements covering all aspects of quarantine procedures to prevent the spread of invasive species and diseases. Additionally the military complies with the Executive Order 13112 of 3 February 1999, "Invasive Species" and the International Plant Protection Convention, which is included in the Food and Agriculture Organization of the United Nations. Specific to ports of entry are regulations under CFR Title 9 (Animals and Animal Products) and CFR 42 (Public Health) that the Sea Services follow. The U.S. Navy has specific programs in cooperation with the United States Department of Agriculture, Customs Border Protection – Agriculture (CBPa) section under the Office of Homeland Security and the United States Public Health Service (USPHS) that further amplify quarantine measures.

Military-Civilian Cooperative Activities

The CBPa program is a military cooperator's program with the USDA that enables ships to pre-clear upon entry into a U.S. port after visiting foreign countries. Each ship in the Pacific is directed by instruction to have two trained cooperators on board. This program mainly deals with fresh fruits and vegetables and meats, poultry and eggs that may have been acquired in foreign countries. However, certain items that are made from raw agricultural products are also included, such as tatami mats, certain baskets and uncured animal hides. This program aims to prevent agricultural pests such as various fruit flies and wood boring beetles, and zoonotic diseases such as foot and mouth disease, exotic newcastle disease and bovine spongiform encephalopathy from entering the United States or becoming established. The impact of the pests or disease on U.S. agriculture

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Military Quarantines

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could be devastating and cost billions of dollars.

The Navy has a cooperative agreement with the USPHS to have certain trained individuals (corpsmen who are preventive medicine technicians and entomologists) act as inspectors and issue Deratting/Deratting Exemption Certificates. This certifies that the vessel is free of rodents. The west coast of North America is a plague endemic area. The certificate states that no rodents are on board after an inspection has been conducted. Commissioned military medical officers may be designated by the USPHS to hold the seal that makes the certificate official.

Training

Within the U. S. Navy, medical department personnel receive training to perform shipboard pest control. Generally this is to ensure that the galleys and food stores remain free of common pests such as cockroaches and stored products' pests. Quarantine procedures, requirements and actions are reviewed. Invasive species are discussed. Many specific examples are of concern to the Pacific Fleet including the Asian gypsy moth, the Khapra beetle, brown tree snakes, the Asian long-horned beetle, Asian honey bees and associated mites.

Agricultural Washdowns of Equipment

Unique to the military is the transport of war material that includes rolling stock of the U. S. Marine Corps and U. S. Army. This rolling stock includes all of the vehicles, trailers, trucks, water tanks, tracked vehicles such as tanks and bulldozers that go to war. Prior to return to the United States or another country that serves as the home port, all of the rolling stack must be cleaned, inspected and certified to be free of foreign soil, seeds, plants, insects or other animals. Great care is taken to do these agricultural washdowns correctly and prevent invasive species from "hitching" a ride. Military personnel who receive training from the USDA can be designated as pre-clearance inspectors to help expedite the process. The USDA, however, still makes the final determination that the rolling stock is clean and can be off loaded onto U.S. soil. In foreign countries similar personnel exist within the government structure and make determinations based on the criteria for that country.

Ship Maritime Health Declarations

U. S. Navy ships upon entry into foreign ports may be asked to provide information regarding communicable diseases and commodities on board. The Commanding Officer (CO) will provide a Maritime Health Declaration and ask for a Controlled Free Pratique. This is essentially a self-declaration that the ship is free of disease and any other problems of possible concern. As U. S. Navy ships are considered sovereign territory, the CO can and will deny any foreign officials request to inspect the vessel. This is a regulation and foreign countries are prohibited to make such inspections.

West Nile Virus: An Example

Emerging and re-emerging diseases are of great concern to the Navy and its sister services. The services take as many precautions as possible to not transport or introduce these diseases into new areas. West Nile Virus (WNV) has received a lot of attention since it first appeared in New York in 1999. It has rapidly spread throughout the continental United States with only Oregon apparently still free of the disease. Alaska and Hawai`i are also reported to be free of WNV. The military does all that it can to comply with preventive means to help keep the virus out of these States. Hawai`i, with its fragile ecosystem and tourism-based economy, is of particular concern. WNV is unlikely to arrive in the Islands by natural means as infected birds probably could not fly here on their own. Military transport goes through agricultural washdowns and disinfestation to ensure that it is not brought in by sea or air. Additionally, all military agencies and personnel follow all Federal and State quarantine procedures for animals, birds and plants.

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Increase of Multi-drug Resistant Tuberculosis in Hawaii

Tuberculosis (TB) is a leading killer among infectious diseases worldwide. The World Health Organization estimates that about two million people die of TB each year. Without accelerated worldwide efforts, 70 million could die by the year 2020. This global epidemic is fueled by the spread of HIV/AIDS and the emergence of multi-drug resistance.

The good news is that Hawai`i's case count decreased significantly in 2003; however, we must be cautious about the increase in the number of multi-drug resistant cases. This increase has significant impact on the program due to the need for expensive medications and the clinical needs of these challenging cases.

Danger of Resistant TB

Although, drug resistant TB in Hawai`i decreased from 22 cases (in 2002) to 11 cases (in 2003), the number of multi-drug resistant cases increased from one in 2002 to four in 2003. All 11 drug resistant cases in 2003 were in foreign-born persons.

Multi-drug resistant TB cases represent the most challenging and expensive TB infections to treat and cure. TB is usually treated with a combination of antibiotics drugs that are relatively inexpensive, easy to administer orally, and can cure TB. However, when a patient is infected by or develops a resistant strain, the therapies available are much more expensive, inconvenient or in the case of daily injections, painful. In some cases, treatment and monitoring of a multi-drug resistant case of TB can last many years.

Tuberculosis is transmitted via the airborne route. It usually affects the lungs, and these cases are most infectious. It may also infect other parts of the body. Individuals can be infected with TB when a person with TB disease of the lungs or throat coughs, sneezes, or sings spreading contaminated droplets. Transmission usually requires prolonged contact. Signs and symptoms of TB include cough, fever, night sweats, loss of appetite, weight loss and fatigue.

TB Facts

- In 2003, the United States reported 14,871 cases of TB, representing a TB case rate of 5.1 per 100,000 (Preliminary CDC data).
- In 2003, Hawai`i reported 117 cases of TB, representing a TB case rate of 9.3 cases per 100,000
- Hawai`i TB case rates fell 56.5% over the past decade from 21.4 cases per 100,000 in 1993 to 9.3 cases per 100,000 in 2003.
- Hawai`i TB case rates fell 21.8% over the past year from 11.9 cases per 100,000 in 2002 to 9.3 cases per 100,000 in 2003.

Hawai`i Cases by County (2003)

- Honolulu: 96 new TB cases (10.7 cases/100,000)
- Hawaii: 10 new TB cases (6.5 cases/100,000)
- Maui: 8 new TB cases (6.0 cases/100,000)
- Kauai: 3 new TB cases (5.0 cases/100,000)

March 24th marked World Tuberculosis Day. On this day in 1882, Robert Koch announced the discovery of the tuberculosis bacillus (TB). The yearly commemoration is intended to raise awareness of TB and stress the importance of TB control efforts.

The Department of Health TB Program returned to the Lanakila Health Center (LHC) in the summer of 2003 after a total renovation of the 13,000 square-foot clinic. With the installation of a digital and network-integrated X-ray system and a negative air pressure system, the clinic is now a state-of-the-art facility. In 2003, the TB Program at LHC administered over 21,000 skin tests and 13,276 X-rays. The number of patients seeking TB services increased after the re-opening of the renovated clinic space.

For more information on program services, please check the TB Program's website at http://www.hawaii.gov/doh/resource/comm_dis/tb/

For more information, contact: Jason Nehal, CDC Public Health Advisor, or Dr. Jessie Wing, CDC Medical Officer and Chief, Tuberculosis Control Branch, at (808) 832-5731.

Submitted by Jessie Wing, M.D., and Jason Nehal, Hawai`i Tuberculosis Control Program.

Sexually Transmitted Disease Treatment Guidelines:
Update for gonococcal infections and syphilis

1. Gonorrhea

The availability of oral regimens for the treatment of gonorrhea acquired in Hawai`i, California, Asia and the Pacific is limited.

According to the 2002 Centers for Disease Control and Prevention's (CDC) Sexually Transmitted Diseases Treatment Guidelines[1], the oral regimens recommended for the treatment of uncomplicated gonococcal infections of the cervix, urethra, and rectum include: cefixime, ciprofloxacin, ofloxacin, and levofloxacin. Cefixime is no longer being manufactured in the United States (U.S.)[2]. **Since 2000, the Hawai`i State Department of Health (DOH) has recommended that ciprofloxacin and other quinolones NOT be used to treat gonorrheal infections acquired in Hawai`i,**[1,3] because Ciprofloxacin-resistant *N. gonorrhea* is considered endemic in the state.

The CDC has evaluated but not recommended any alternative oral treatment regimen for gonococcal infections since 2002 because study results:

- have not met the stringent minimum efficacy criteria,
- αre undocumented or show unacceptable efficacy in treating pharyngeal infection,
- or have safety concerns.[4]

Azithromycin (2grams) administered as a single oral dose, has acceptable efficacy for urogenital and pharyngeal gonococcal infections but has not been recommended by the CDC because of the high frequency of associated gastrointestinal intolerance. The Food and Drug Administration (FDA) has approved cefpodoxime proxetil, (200mg) administered orally as a single dose, for the treatment of acute, uncomplicated gonococcal infections of the urethra, cervix, and rectum.[5] This regimen has high efficacy, but does not meet the stringent standards set by the CDC (lower 95% confidence interval for cure of > 95%). The recommended CDC regimen for treatment of pharyngeal gonorrhea remains ceftriaxone.

With the limited availability of oral treatment regimens, the DOH recommends the use of cefpodoxime proxetil (400 mg) administered in a single dose orally, as an alternative regimen for the treatment of uncomplicated gonococcal infections of the cervix, urethral and rectum acquired in Hawai`i. Ceftriaxone is recommended for the treatment of uncomplicated gonococcal infections of the pharynx. The CDC is currently evaluating the efficacy of 400 mg cefpodoxime proxetil for the treatment of pharyngeal infections.

The DOH still recommends co-treatment for chlamydial infection in patients infected with *N. gonorrhoeae* unless chlamydial infection is ruled-out using a sensitive laboratory test such as the nucleic acid amplification test. Patients infected with *N. gonorrhoeae* are often co-infected with *C. trachomatis*. "Because most gonococci in the U.S. are susceptible to doxycycline and azithromycin, routine co-treatment may hinder the development of antimicrobial resistant *N. gonorrhoeae*" (1) and may help decrease the prevalence of chlamydia in the state.

If gonorrhea is documented and signs and symptoms persist or recur, then a culture-based test of cure is recommended to ensure the patient does not have an untreated resistant-strain of *N. gonorrhoeae* infection.

2. SYPHILIS:

Azithromycin (2 grams) administered in a single oral dose is no longer recommended as an alternative regimen for uncomplicated primary, secondary or early latent syphilis. Treatment failures have been reported by the San Francisco Department of Public Health.[6] Please see accompanying treatment guidelines chart.

REFERENCES:

1. Sexually Transmitted Diseases Treatment Guidelines, 2002. MMWR 51(RR-6) 1-80. May 10, 2002.
2. Discontinuation of Cefixime Tablets-United States. MMWR 51(46). November 22, 2002.
3. Increases in Flouroquinolone-Resistant *Neiserria gonorrhoeae* in Hawai`i and California, 2001. MMWR 51(46). November 22, 2002.
4. Oral Alternatives to Cefixime for the Treatment of Uncomplicated *Neisseria Gonorrhoeae* Urogenital Infections. www.cdc.gov/std/treatment/cefixime.htm
5. Physicians Desk Reference. 58th Ed. 2004.
6. Azithromycin treatment failures in syphilis infections- San Francisco California 2002-2003. MMWR Vol 53. No 9. March 12, 2004 pp197-198.

Submitted by Venie Lee, M.P.H., Alan Katz, MD, M.P.H., John A. Burns School of Medicine, and Roy Ohye, M.P.H.* (* STD Section, Sexually-Transmitted Diseases and AIDS Prevention Branch.)*

HAWAII STD TREATMENT GUIDELINES FOR ADULTS AND ADOLESCENTS 2004

These guidelines for the treatment of patients with STD's reflect the 2002 CDC STD Treatment Guidelines and the Region IX Infertility Clinical Guidelines. The focus is primarily on STD's encountered in office practice. These guidelines are intended as a source of clinical guidance and are not a comprehensive list of all effective regimens. Reportable STDs include chancroid, chlamydia, gonorrhea, PID and syphilis. To report STD infections, request assistance with confidential notification of sexual partners of patients with syphilis, gonorrhea, chlamydia or HIV infection, or to obtain additional information on the medical management of STD patients, call the Hawaii State Health Department at **(808) 733-9281**.

DISEASE	RECOMMENDED REGIMENS	DOSE/ROUTE	ALTERNATIVE REGIMENS
CHANCROID	● Azithromycin **or** ● Ceftriaxone **or** ● Ciprofloxacin[2] **or** ● Erythromycin base	1 g po 250 mg IM 500 mg po bid x 3 d 500 mg po tid x 7 d	
CHLAMYDIA			
Uncomplicated Infections Adults/Adolescents[1]	● Azithromycin **or** ● Doxycycline[2]	1 g po 100 mg po bid x 7 d	Erythromycin base 500 mg po qid x 7 d **or** Erythromycin ethylsuccinate 800 mg po qid x 7 d
Pregnant Women[3]	● Azithromycin **or** ● Amoxicillin **or** ● Erythromycin base	1 g po 500 mg po tid x 7 d 500 mg po qid x 7 d	Erythromycin base 250 mg po qid x 14 d **or** Erythromycin ethylsuccinate 800 mg po qid x 7 d **or** Erythromycin ethylsuccinate 400 mg po qid x 14 d
GONORRHEA Ciprofloxasin and other quinolones should NOT be used for infections acquired in Hawaii, California, Asia, and the Pacific due to increased prevalence of Ciprofloxacin-resistant strain N. gonorrhoeae in these areas. If gonorrhea is documented and it persists or recurs, test-of-cure culture is recommended to ensure patient does not have an untreated resistant-strain *N. gonorrhoeae* infection. Co-treatment for chlamydial infection in patients infected with *N. gonorrhoeae* is recommended unless chlamydial infection is ruled-out using sensitive laboratory test such as NAAT.			
Uncomplicated Infections Adults/Adolescents Pregnant Women	**Either** ● Cefixime[5] **or** ● Ceftriaxone **Plus co-treatment for chlamydia**	400 mg po 125 mg IM	**Either** Cefpodoxime[5] 400 mg po **or** Spectinomycin[5] 2 g IM **or** Ceftizoxime 500 mg IM **or** Cefotaxime 500 mg IM **or** Cefoxitin 2 g IM with Probenecid 1 g po **Plus co-treatment for chlamydia**
Pharyngeal Infections	● Ceftriaxone	125 mg IM	
PELVIC INFLAMMATORY DISEASE[4,6]	**Parenteral**[7] **Either** ● Cefotetan **or** ● Cefoxitin **Plus** Doxycycline[2] ● Clindamycin **plus** Gentamicin	2 g IV q 12 hrs 2 g IV q 6 hrs 100 mg po or IV q 12 hrs 900 mg IV q 8 hrs 2 mg/kg IV or IM followed by 1.5 mg/kg IV or IM q 8 hrs	**Parenteral**[7] Ampicillin/Sulbactam 3 g IV q 6 hrs **plus** Doxycycline[2] 100 mg po or IV q 12 hrs
	Oral Treatment/IM **Either** ● Ceftriaxone **or** ● Cefoxitin with Probenecid **Plus** Doxycycline **With or Without** Metronidazole	250 mg IM 2 g IM 1 g po 100 mg po bid x 14 d 500 mg po bid x 14 d	
SYPHILIS			
Uncomplicated			
Primary, Secondary, and Early Latent	● Benzathine penicillin G	2.4 million units IM	Doxycycline[2, 13] 100 mg po bid x 2 weeks, **or** Tetracycline[2, 13] 500 mg po qid x 2 weeks **or** Ceftriaxone[13] 1g IM/IV qd x 8-10 d **or**
Late Latent and Unknown duration	● Benzathine penicillin G	7.2 million units, administered as 3 doses of 2.4 million units IM, at 1-week intervals	Doxycycline[2,13] 100 mg po bid x 4 weeks, **or** Tetracycline[2, 13] 500 mg po qid x 4 weeks
Neurosyphilis[14]	● Aqueous crystalline penicillin G	18-24 million units daily, administered as 3-4 million units IV q 4 hrs x 10-14 d	Procaine penicillin G, 2.4 million units IM qd x 10-14 d **plus** Probenecid 500 mg po qid x 10-14 d **or** Ceftriaxone[13] 2 g IM/IV qd x 10-14 d
HIV Infection			
Primary, Secondary, and Early Latent	● Benzathine penicillin G	2.4 million units IM	Doxycycline[2, 14] 100 mg po bid x 2 weeks **or** Tetracycline[2,14] 500 mg po qid x 2 weeks
Late Latent, and Unknown duration[15] **with normal CSF Exam**	● Benzathine penicillin G	7.2 million units, administered as 3 doses of 2.4 million units IM, at 1-week intervals	None
Neurosyphilis[14, 15]	● Aqueous crystalline penicillin G	18-24 million units daily, administered as 3-4 million units IV q 4 hrs x 10-14 d	Procaine penicillin G, 2.4 million units IM qd x 10-14 d **plus** Probenecid 500 mg po qid x 10-14 d
Pregnant Women[15]			
Primary, Secondary, and Early Latent	● Benzathine penicillin G	2.4 million units IM	None
Late Latent and Unknown duration	● Benzathine penicillin G	7.2 million units, administered as 3 doses of 2.4 million units IM, at 1-week intervals	None
Neurosyphilis[14]	● Aqueous crystalline penicillin G	18-24 million units daily, administered as 3-4 million units IV q 4 hrs x 10-14 d	Procaine penicillin G, 2.4 million units IM q d x 10-14 d **plus** Probenecid 500 mg po qid x 10-14 d

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BACTERIAL VAGINOSIS			
Adults/Adolescents	● Metronidazole **or** ● Clindamycin cream[10] **or** ● Metronidazole gel	500 mg po bid x 7 d 2% one full applicator (5g) intravaginally qhs x 7 d 0.75% one full applicator (5g) intravaginally qd x 5 d	Metronidazole 2 g po, **or** Clindamycin 300 mg po bid x 7 d **or** Clindamycin ovules 100 g intravaginally qhs x 3 d
Pregnant Women	● Metronidazole **or** ● Clindamycin	250 mg po tid x 7 d 300 mg po bid x 7 d	
EPIDIDYMITIS [4,6]	Likely due to gonorrhea or chlamydial infection ● Ceftriaxone **plus** Doxycycline Likely due to enteric organisms ● Ofloxacin **or** ● Levofloxacin	 250 mg IM 100 mg po bid x 10 d 300 mg po bid x 10 d 500 mg po qd x 10 d	
HERPES SIMPLEX VIRUS[11]			
First Clinical Episode of Herpes	● Acyclovir **or** ● Acyclovir **or** ● Famciclovir **or** ● Valacyclovir	400 mg po tid x 7-10 d 200 mg po 5/day x 7-10 d 250 mg po tid x 7-10 d 1 g po bid x 7-10 d	
Episodic Therapy for Recurrent Episodes	● Acyclovir **or** ● Acyclovir **or** ● Acyclovir **or** ● Famciclovir **or** ● Valacyclovir **or** ● Valacyclovir	400 mg po tid x 5 d 200 mg po 5/day x 5 d 800 mg po bid x 5 d 125 mg po bid x 5 d 500 mg po bid x 3-5 d 1 g po qd x 5 d	
Suppressive Therapy	● Acyclovir **or** ● Famciclovir **or** ● Valacyclovir **or** ● Valacyclovir	400 mg po bid 250 mg po bid 500 mg po qd 1 g po qd	
HIV Infection[12]			
Episodic Therapy for Recurrent Episodes	● Acyclovir **or** ● Acyclovir **or** ● Famciclovir **or** ● Valacyclovir	400 mg po tid x 5-10 d 200 mg po 5/day x 5-10 d 500 mg po bid x 5-10 d 1 g po bid x 5-10 d	
Suppressive Therapy	● Acyclovir **or** ● Famciclovir **or** ● Valacyclovir	400-800 mg po bid-tid 500 mg po bid 500 mg po bid	
HUMAN PAPILLOMAVIRUS			
External Genital / Perianal Warts	**Patient Applied** ● Podofilox[16] 0.5% solution or gel **or** ● Imiquimod[17] 5% cream **Provider Administered** ● Cryotherapy **or** ● Podophyllin[16] resin 10%-25% in tincture of benzoin **or** ● Trichloroacetic acid (TCA) **or** ● Bichloroacetic acid (BCA) 80%-90% **or** ● Surgical removal		**Alternative Regimen** Intralesional interferon **or** Laser surgery
Mucosal Genital Warts	● Cryotherapy **or** ● TCA or BCA 80%-90% **or** ● Podophyllin[16] resin 10%-25% in tincture of benzoin. **or** ● Surgical removal	Vaginal, urethral meatus, and anal Vaginal and anal Urethral meatus only Anal warts only	
LYMPHOGRANULOMA VENEREUM	● Doxycycline[2]	100 mg po bid x 21 d	Erythromycin base 500 mg po qid x 21 d Azithromycin[18] 1 g po qd x 21 d
MUCOPURULENT CERVICITIS[4,6,8]	● Azithromycin **or** ● Doxycycline[2]	1 g po 100 mg po bid x 7 d	Erythromycin base 500 mg po qid x 7 d **or** Erythromycin ethylsuccinate 800 mg po qid x 7 d
NONGONOCOCCAL URETHRITIS[6]	● Azithromycin **or** ● Doxycycline[2]	1 g po 100 mg po bid x 7 d	Erythromycin base 500 mg po qid x 7 d **or** Erythromycin ethylsuccinate 800 mg po qid x 7 d
TRICHOMONIASIS[9]	● Metronidazole	2 g po	Metronidazole 500 mg po bid x 7 d

1 Annual screening for women age 25 years or younger. Nucleic Acid Amplification Tests (NAATS) are recommended. Women with Chlamydia should be rescreened 3-4 months after treatment.
2 Contraindicated for pregnant and nursing women.
3 Test-of-cure follow-up is recommended because the regimens are not highly efficacious (Amoxicillin and Erythromycin) or the data on safety and efficacy are limited (Azithromycin).
4 If gonorrhea is documented and it persists or recurs, test-of-cure culture is recommended to ensure patient does not have an untreated resistant gonorrhea infection.
5 Not recommended for pharyngeal gonococcal infection.
6 Testing for gonorrhea and chlaymdia is recommended because a specific diagnosis may improve compliance and partner management.
7 Discontinue 24 hours after patient improves clinically and continue with oral therapy for a total course of 14 days.
8 If gonorrhea is documented, add a gonorrhea treatment regimen.
9 Documented infection with treatment failure should be evaluated for metronidazole-resistant T. vaginalis. Referral to CDC at (404) 639-8371.
10 Might weaken latex condoms and diaphragms because oil-based; not recommended in pregnancy.
11 Counseling about natural history, asymptomatic shedding, and sexual transmission is an essential component of herpes management.
12 If lesions persist or recur while receiving antiviral therapy, HSV resistance should be suspected and a viral isolate should be obtained for testing.
13 Because efficacy of these therapies has not been established and compliance of some of these regimes difficult, close follow-up is essential. If compliance or follow-up cannot be ensured then patient should be desensitized and treated with benzathine pencillin.
14 Some specialists recommend 2.4 million units of benazthine penicillin G q week for 1 to 3 weeks after completion of initial treatment.
15 Patients allergic to penicillin should be treated with penicillin after desensitization.
16 Contraindicated during pregnancy.
17 Safety in pregnancy has not been well established.
18 Azithromycin may prove useful for treatment in pregnant women but no published data are available regarding its safety and efficacy.

Stdrx2004

Recommended Childhood and Adolescent Immunization Schedule, United States, January – June 2004

The recommended Childhood and Adolescent Immunization Schedule for January – June 2004 was published in the January 16, 2004 issue of MMWR. The following is a synopsis of the recommendations.

Each year, the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) reviews the recommended childhood and adolescent immunization schedule to ensure that it is current with changes in manufacturers' vaccine formulations and reflects revised recommendations for the use of licensed vaccines, including those newly licensed. This schedule has been approved by the ACIP, the American Academy of Family Physicians, and the American Academy of Pediatrics.

Catch-Up Childhood and Adolescent Immunization Schedule

A catch-up immunization schedule for children and adolescents who start late or who are >1 month behind was introduced in 2003 and remains the same. The schedule is divided into two age groups: children aged 4 months – 6 years and children/adolescents aged 7 – 18 years.

Hepatitis B Vaccine

The last dose in the vaccination series should not be administered before age 24 weeks (updating the previous recommendation not to administer the last dose before age six months). **Please note: The Hawaii Administrative Rules, Chapter 11-157 require that the third dose of hepatitis B vaccine be administered on or after six calendar months of age.**

Adolescent Tetanus and Diphtheria Toxoids (Td) Vaccine

The range of recommended ages for the adolescent Td vaccine dose has been updated to emphasize a preference for vaccinating at ages 11 – 12 years with ages 13 – 18 years serving as a catch-up interval.

Clarification Regarding Certain Final Doses

The final dose in the DTaP series should be given at age ≥4 years. The final doses in the *Haemophilus influenzae* type b (Hib) and pneumococcal conjugate vaccine (PCV) series should be given at age ≥12 months.

Influenza Vaccine

Healthy children aged 6-23 months are encouraged to receive influenza vaccine when feasible during the 2003-2004 influenza season.

Beginning in fall 2004, children aged 6 – 23 months will be recommended to receive annual influenza vaccine. An updated childhood and adolescent immunization schedule for July – December 2004 will be released to reflect this change.

An intranasally administered, live, attenuated influenza vaccine (LAIV) was approved for use in the United States in June 2003. For healthy persons aged 5 – 49 years, LAIV is an acceptable alternative to the intramuscular trivalent inactivated influenza vaccine.

Vaccine Information Statements

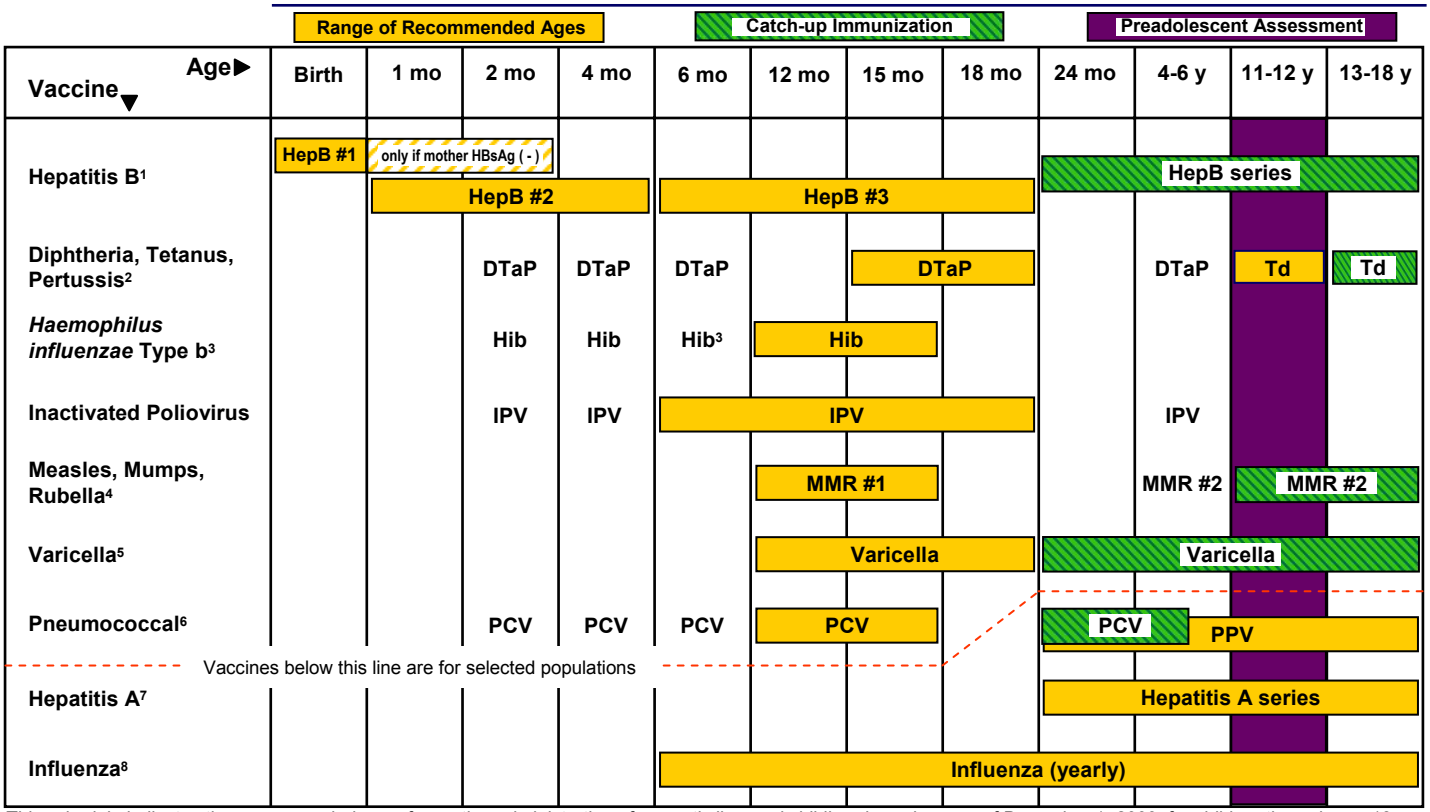
The National Childhood Vaccine Injury Act requires that all health-care providers give parents or patients copies of Vaccine Information Statements before administering each dose of the vaccines listed in the schedule.

For further information, please see the enclosed copy of the Recommended Childhood and Adolescent Immunization Schedule – United States, January – June 2004, call the Hawaii Immunization Branch at (808) 586-8332, or visit the CDC National Immunization Program website at http://www.cdc.gov/nip.

Reference:

Centers for Disease Control and Prevention. Recommended Childhood and Adolescent Immunization Schedule – United States, January – June 2004. *MMWR* 2004; 53:Q1-Q4.

Recommended Childhood and Adolescent Immunization Schedule — United States, January – June 2004



This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2003, for children through age 18 years. Any dose not given at the recommended age should be given at any subsequent visit when indicated and feasible. Indicates age groups that warrant special effort to administer those vaccines not previously given. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form can be found on the Internet: http://www.vaers.org/ or by calling 1-800-822-7967.

1. Hepatitis B (HepB) vaccine. All infants should receive the first dose of hepatitis B vaccine soon after birth and before hospital discharge; the first dose may also be given by age 2 months if the infant's mother is hepatitis B surface antigen (HBsAg) negative. Only monovalent HepB can be used for the birth dose. Monovalent or combination vaccine containing HepB may be used to complete the series. Four doses of vaccine may be administered when a birth dose is given. The second dose should be given at least 4 weeks after the first dose, except for combination vaccines which cannot be administered before age 6 weeks. The third dose should be given at least 16 weeks after the first dose and at least 8 weeks after the second dose. The last dose in the vaccination series (third or fourth dose) should not be administered before age 24 weeks.

Infants born to HBsAg-positive mothers should receive HepB and 0.5 mL of Hepatitis B Immune Globulin (HBIG) within 12 hours of birth at separate sites. The second dose is recommended at age 1 to 2 months. The last dose in the immunization series should not be administered before age 24 weeks. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) at age 9 to 15 months.

Infants born to mothers whose HBsAg status is unknown should receive the first dose of the HepB series within 12 hours of birth. Maternal blood should be drawn as soon as possible to determine the mother's HBsAg status; if the HBsAg test is positive, the infant should receive HBIG as soon as possible (no later than age 1 week). The second dose is recommended at age 1 to 2 months. The last dose in the immunization series should not be administered before age 24 weeks.

2. Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine. The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at age 15 to 18 months. The final dose in the series should be given at age ≥4 years. **Tetanus and diphtheria toxoids (Td)** is recommended at age 11 to 12 years if at least 5 years have elapsed since the last dose of tetanus and diphtheria toxoid-containing vaccine. Subsequent routine Td boosters are recommended every 10 years.

3. *Haemophilus influenzae* type b (Hib) conjugate vaccine. Three Hib conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB or ComVax [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required. DTaP/Hib combination products should not be used for primary immunization in infants at ages 2, 4 or 6 months but can be used as boosters following any Hib vaccine. The final dose in the series should be given at age ≥12 months.

4. Measles, mumps, and rubella vaccine (MMR). The second dose of MMR is recommended routinely at age 4 to 6 years but may be administered during any visit, provided at least 4 weeks have elapsed since the first dose and both doses are administered beginning at or after age 12 months. Those who have not previously received the second dose should complete the schedule by the 11- to 12-year-old visit.

5. Varicella vaccine. Varicella vaccine is recommended at any visit at or after age 12 months for susceptible children (i.e., those who lack a reliable history of chickenpox). Susceptible persons age ≥13 years should receive 2 doses, given at least 4 weeks apart.

6. Pneumococcal vaccine. The heptavalent **pneumococcal conjugate vaccine (PCV)** is recommended for all children age 2 to 23 months. It is also recommended for certain children age 24 to 59 months. The final dose in the series should be given at age ≥12 months. **Pneumococcal polysaccharide vaccine (PPV)** is recommended in addition to PCV for certain high-risk groups. See *MMWR* 2000;49(RR-9):1-38.

7. Hepatitis A vaccine. Hepatitis A vaccine is recommended for children and adolescents in selected states and regions and for certain high-risk groups; consult your local public health authority. Children and adolescents in these states, regions, and high-risk groups who have not been immunized against hepatitis A can begin the hepatitis A immunization series during any visit. The 2 doses in the series should be administered at least 6 months apart. See *MMWR* 1999;48(RR-12):1-37.

8. Influenza vaccine. Influenza vaccine is recommended annually for children age ≥6 months with certain risk factors (including but not limited to children with asthma, cardiac disease, sickle cell disease, human immunodeficiency virus infection, and diabetes; and household members of persons in high-risk groups [see *MMWR* 2003;52(RR-8):1-36]) and can be administered to all others wishing to obtain immunity. In addition, healthy children age 6 to 23 months are encouraged to receive influenza vaccine if feasible, because children in this age group are at substantially increased risk of influenza-related hospitalizations. For healthy persons age 5 to 49 years, the intranasally administered live-attenuated influenza vaccine (LAIV) is an acceptable alternative to the intramuscular trivalent inactivated influenza vaccine (TIV). See *MMWR* 2003;52(RR-13):1-8. Children receiving TIV should be administered a dosage appropriate for their age (0.25 mL if age 6 to 35 months or 0.5 mL if age ≥3 years). Children age ≤8 years who are receiving influenza vaccine for the first time should receive 2 doses (separated by at least 4 weeks for TIV and at least 6 weeks for LAIV).

For additional information about vaccines, including precautions and contraindications for immunization and vaccine shortages, please visit the National Immunization Program Web site at www.cdc.gov/nip/ or call the National Immunization Information Hotline at 800-232-2522 (English) or 800-232-0233 (Spanish).

Approved by the Advisory Committee on Immunization Practices (www.cdc.gov/nip/acip), the American Academy of Pediatrics (www.aap.org), and the American Academy of Family Physicians (www.aafp.org).

For Children and Adolescents Who Start Late or Who Are >1 Month Behind

The tables below give catch-up schedules and minimum intervals between doses for children who have delayed immunizations. There is no need to restart a vaccine series regardless of the time that has elapsed between doses. Use the chart appropriate for the child's age.

Catch-up schedule for children age 4 months through 6 years

Dose 1 (Minimum Age)	Minimum Interval Between Doses			
	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
DTaP (6 wk)	**4 wk**	**4 wk**	**6 mo**	**6 mo**[1]
IPV (6 wk)	**4 wk**	**4 wk**	**4 wk**[2]	
HepB[3] (birth)	**4 wk**	**8 wk** (and 16 wk after first dose)		
MMR (12 mo)	**4 wk**[4]			
Varicella (12 mo)				
Hib[5] (6 wk)	**4 wk:** if first dose given at age <12 mo **8 wk (as final dose):** if first dose given at age 12-14 mo **No further doses needed:** if first dose given at age ≥15 mo	**4 wk**[6]**:** if current age <12 mo **8 wk (as final dose)**[6]**:** if current age ≥12 mo and second dose given at age <15 mo **No further doses needed:** if previous dose given at age ≥15 mo	**8 wk (as final dose):** this dose only necessary for children age 12 mo–5 y who received 3 doses before age 12 mo	
PCV[7]**:** (6 wk)	**4 wk:** if first dose given at age <12 mo and current age <24 mo **8 wk (as final dose):** if first dose given at age ≥12 mo or current age 24-59 mo **No further doses needed:** for healthy children if first dose given at age ≥24 mo	**4 wk:** if current age <12 mo **8 wk (as final dose):** if current age ≥12 mo **No further doses needed:** for healthy children if previous dose given at age ≥24 mo	**8 wk (as final dose):** this dose only necessary for children age 12 mo–5 y who received 3 doses before age 12 mo	

Catch-up schedule for children age 7 through 18 years

Minimum Interval Between Doses		
Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Booster Dose
Td: **4 wk**	**Td:** **6 mo**	**Td**[8]**:** **6 mo:** if first dose given at age <12 mo and current age <11 y **5 y:** if first dose given at age ≥12 mo and third dose given at age <7 y and current age ≥11 y **10 y:** if third dose given at age ≥7 y
IPV[9]**:** **4 wk**	**IPV**[9]**:** **4 wk**	**IPV**[2,9]
HepB: **4 wk**	**HepB:** **8 wk** (and 16 wk after first dose)	
MMR: **4 wk**		
Varicella[10]**:** **4 wk**		

1. **DTaP:** The fifth dose is not necessary if the fourth dose was given after the fourth birthday.
2. **IPV:** For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if third dose was given at age ≥4 years. If both OPV and IPV were given as part of a series, a total of 4 doses should be given, regardless of the child's current age.
3. **HepB:** All children and adolescents who have not been immunized against hepatitis B should begin the HepB immunization series during any visit. Providers should make special efforts to immunize children who were born in, or whose parents were born in, areas of the world where hepatitis B virus infection is moderately or highly endemic.
4. **MMR:** The second dose of MMR is recommended routinely at age 4 to 6 years but may be given earlier if desired.
5. **Hib:** Vaccine is not generally recommended for children age ≥5 years.
6. **Hib:** If current age <12 months and the first 2 doses were PRP-OMP (PedvaxHIB or ComVax [Merck]), the third (and final) dose should be given at age 12 to 15 months and at least 8 weeks after the second dose.
7. **PCV:** Vaccine is not generally recommended for children age ≥5 years.
8. **Td:** For children age 7 to 10 years, the interval between the third and booster dose is determined by the age when the first dose was given. For adolescents age 11 to 18 years, the interval is determined by the age when the third dose was given.
9. **IPV:** Vaccine is not generally recommended for persons age ≥18 years.
10. **Varicella:** Give 2-dose series to all susceptible adolescents age ≥13 years.

Reporting Adverse Reactions
Report adverse reactions to vaccines through the federal Vaccine Adverse Event Reporting System. For information on reporting reactions following immunization, please visit www.vaers.org or call the 24-hour national toll-free information line (800) 822-7967.

Disease Reporting
Report suspected cases of vaccine-preventable diseases to your state or local health department.

For additional information about vaccines, including precautions and contraindications for immunization and vaccine shortages, please visit the National Immunization Program Web site at www.cdc.gov/nip or call the National Immunization Information Hotline at 800-232-2522 (English) or 800-232-0233 (Spanish).

Availability of Murine typhus Testing in Hawai`i

Notification regarding the availability of the indirect immunofluorescent antibody assay (IFA) at the Department of Health (DOH) laboratory was sent to all health providers on March 30, 2004.

In response to the increase in the number of cases of murine typhus in 2002 and 2003, the DOH laboratory implemented human IFA testing. The IFA is commonly utilized to diagnose murine typhus by detecting the presence of IgM and/or IgG antibodies in acute serum samples of recently infected patients. Many infected patients do not demonstrate antibodies during the first week after disease onset, thus requiring follow-up testing during or after the second week after onset.

If a health care provider has a patient with suspected typhus, serum or whole blood collected in a non-anticoagulant tube should be submitted to the DOH laboratory. Commercial laboratories that provide phlebotomy services should be instructed to send the samples to the DOH laboratory attention Rebecca Sciulli. The case should also be reported to the DOH immediately at (808) 586-4586.

REFERENCES.

1. Murine Typhus Testing in Hawai`i. Letter to health care providers from Paul V. Effler, M.D., M.P.H., March 30, 2004
2. Sasaki, D.M., D.V.M., M.P.H., Kitsutani, P., M.D., M.P.H., and Bomgaars, M.R., M.D., M.P.H. Murine Typhus in Hawai`i. *Communicable Disease Report,* Hawai`i Department of Health, Mar-Apr 2003, 4-6.
3. Kitsutani, Paul, M.D., M.P.H. Murine typhus Testing in Hawai`i. *Communicable Disease Report,* Hawai`i Department of Health, Sep-Oct 2003, 6.

Submitted by Mona R. Bomgaars, M.D., M.P.H., Co-editor.

Updated Recommendations on the Use of Pneumococcal Conjugate Vaccine: Suspension of Recommendation for Third and Fourth Dose

Updated recommendations on the use of Pneumococcal Conjugate Vaccine were published in the March 5, 2004 issue of MMWR. The following is a synopsis of the recommendations.

On February 13, 2004, the Centers for Disease Control and Prevention (CDC) recommended that health-care providers temporarily suspend routine use of the fourth dose of 7-valent pneumococcal conjugate vaccine (PCV7) for healthy children. This action was taken to conserve vaccine until Wyeth Vaccines, the only U.S. supplier of PCV7 (marketed as Prevnar®), restores sufficient production capacity to meet the national need. Since that recommendation, PCV7 production has been much less than expected because of continuing problems with the PCV7 vial-filling production line, resulting in shortages that may continue beyond summer 2004.

Suspension of Third and Fourth Doses

Effective immediately, CDC, in consultation with the American Academy of Family Physicians, the American Academy of Pediatrics, and the Advisory Committee on Immunization Practices recommends that all health-care providers temporarily suspend routine administration of both the third and fourth doses to healthy children. Limiting healthy children to two doses of PCV7 will conserve vaccine and permit more children to receive at least two doses.

At Risk Children

Health-care providers should continue to administer the routine four-dose series to children at increased risk for severe disease.* Unvaccinated, healthy children aged 12-23 months should receive a single dose of PCV7. For children two or more years of age, PCV7 is not recommended routinely.

Important Record Keeping

Health-care providers should maintain lists of children for whom PCV7 has been deferred so it can be administered when the supply allows. The highest priority for

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Stortage of PCV7 Vaccine

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vaccination among children who have been deferred is children vaccinated with two or less doses who are aged less than one year of age.

For further information, see "Updated Recommendations on the Use of Pneumococcal Conjugate Vaccine: Suspension of Recommendation for Third and Fourth Dose" in MMWR 2004; 53 (No. 8): 177-178, visit the National Immunization Program website at http://www.cdc.gov/nip, or call the Hawaii Immunization Program at (808) 586-8300.

** Children at "high risk" or "presumed high risk" include those with sickle cell disease and other hemoglobinopathies, anatomic asplenia, chronic diseases e.g. chronic cardiac and pulmonary disease and diabetes, CSF fluid leak, HIV infection and other immunocompromising conditions, immunosuppressive chemotherapy or long-term systemic corticosteroid use; children who have undergone solid organ transplantation; and children who either have received or will receive cochlear implants.*

Reference

Centers for Disease Control and Prevention. Updated Recommendations on the Use of Pneumococcal Conjugate Vaccine: Suspension of Recommendation for Third and Fourth Dose. *MMWR* 2004; 53 (No. 8): 177-178.

SARS Reappears in Mainland China

Summary

As of April 26, 2004, eight cases (six possible, two confirmed) cases of Severe Acute Respiratory Syndrome (SARS), including one fatality, have been reported from China. Three generations of cases have occurred. The initial case was a post-graduate student who was exposed in a research laboratory in Beijing. Her onset was on March 25 and she transmitted it to her mother (fatal) and a nurse caring for her. Another laboratory worker is also a possible case. The most recent onset among suspected cases was April 19. In addition, two physicians who treated the post-graduate student in Hefai, Anhui have developed fever.

The cases had traveled between Beijing and Anhui province. The Chinese government is screening travelers at airports and train stations. Close to 1000 contacts of the cases are under medical observation, including 640 in Beijing and 353 in Anhui.

At the request of the Chinese Ministry of Health, the World Health Organization is sending a team to help investigate the source of the cases.

CDC Recommendations to U.S. Physicians

The U.S. Centers for Disease Control and Prevention (CDC) is recommending that U.S. physicians maintain a greater index of suspicion for SARS in patients who:

- Require hospitalization for radiographically confirmed pneumonia or acute respiratory distress syndrome (ARDS) and
- Who have a history of travel to mainland China or have had close contact with an ill person with a history of recent travel to mainland China in the 10 days before onset of symptoms.

When such patients are identified, they should be considered at high risk for SARS infection and the following actions should be taken:

1. Patients should immediately be placed in isolation appropriate for SARS, i.e. contact and airborne precautions along with eye protection.
2. Patients should promptly be reported to the Department of Health (DOH).
3. Patients should promptly be tested for evidence of SARS infection as part of the diagnostic evaluation.

The DOH will identify, evaluate and monitor relevant contacts of the patient, as indicated. The health status of household contacts or persons who provided care to symptomatic patients will be assessed.

Health care providers are reminded to obtain a travel history of patients presenting with acute respiratory illness. In addition, these new cases of SARS provide a reminder to all health care settings, especially physicians

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SARS Reappears

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offices, outpatient clinics, and emergency departments, of the importance of implementing infection control precautions at the point of first contact with patients who have symptoms of a respiratory infection. These include respiratory hygiene/cough etiquette, hand hygiene, and droplet precautions i.e., masks for close patient contact.

For More Information

The reported possible cases of SARS in China represent an evolving situation, and the CDC will distribute updates as additional information is obtained. For more information about SARS and the current U.S. SARS control guidelines, please visit the CDC SARS website at: www.cdc.gov.

For more local information, please call the DOH at (808) 586-4586 in Honolulu.

REFERENCES.

1. SARS–worldwide (19):- China: cases. April 24, 2004. ProMED electronic mail post, sponsored by the International Society for Infectious Diseases.
2. SARS-Worldwide (21):- China, cases. April 26, 2004. ProMED electronic mail post, sponsored by the International Society for Infectious Diseases.

Submitted by David M. Sasaki, D.V.M., M.P.H., Veterinary Medical Officer, Disease Outbreak and Control Division.

ePOI: Pathways to Online Information

The Hawai`i Medical Library recently announced the public release of "ePOI" a new biomedical literature research tool developed at the University of Hawai`i at Manoa (UHM), John A. Burns School of Medicine (JABSOM) and the Hawai`i Medical Library (HML). This online program facilitates access to biomedical research electronic resources in Hawai`i.

- ePOI may be accessed at http://epoi.hawaii.edu.
- ePOI is a single searchable database of the 12,000 online biomedical holdings of the HML, UHM and JABSOM library resources center.
- You may search and find available online resources and "click through" to the journal contents.
- Included are links to selected online journal holdings, article databases, and electronic books.

This research tool is a result of a grant by the national Library of Medicine to a multi-instructional team of librarians, technicians and faculty.

For more information, please contact Carolyn Ching, References Services Coordinator, Hawai`i Medical Library, tel: (808) 536-9302, x113 in Honolulu.

Communicable Disease Report

Communicable Disease Division 586-4580
Tuberculosis Disease Control Branch 832-5731
Hansen's Disease Control Branch 733-9831
STD/AIDS Prevention Branch 733-9010
STD Reporting 733-9289
AIDS Reporting 733-9010
Disease Outbreak Control Division 586-4586
Disease Investigation Branch 586-4586
Immunization Branch 586-8300
Bioterrorism Preparedness and Response Branch 587-6845
Information & Disease Reporting 586-4586
After-hours Emergency Reporting 247-2191
After-hours Neighbor Island Emergency Reporting 800-479-8092

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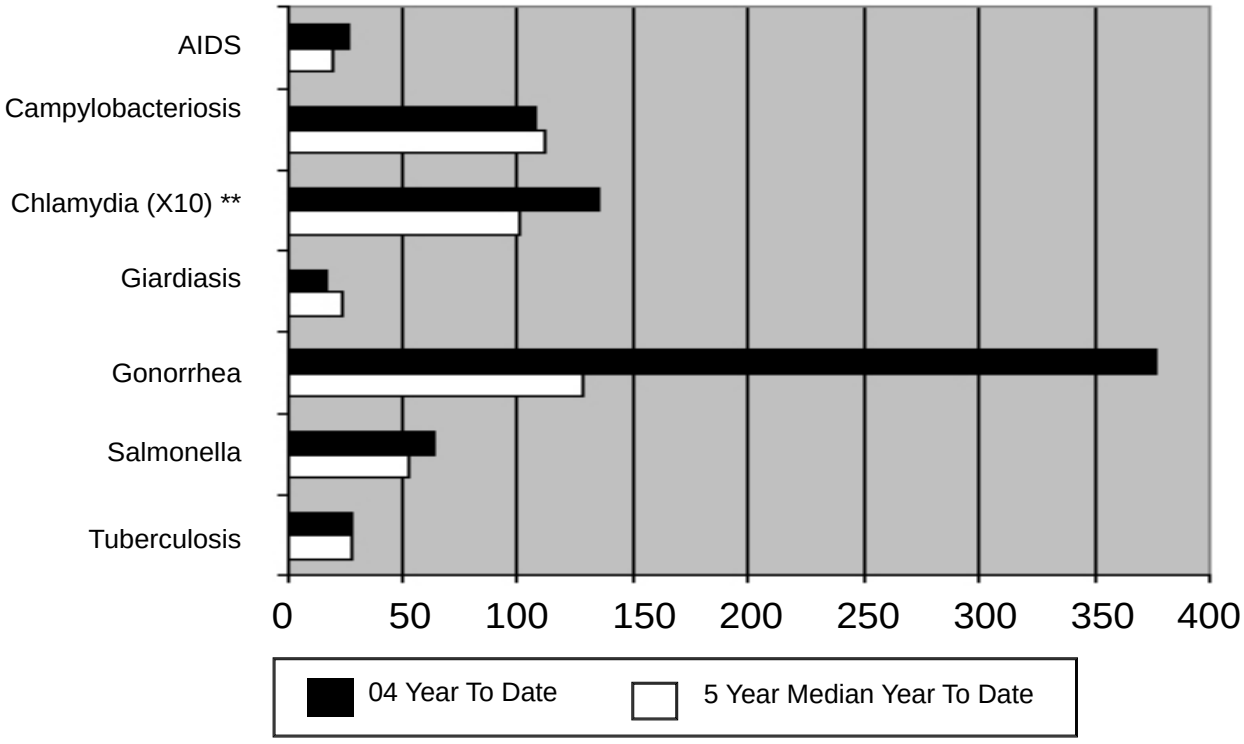
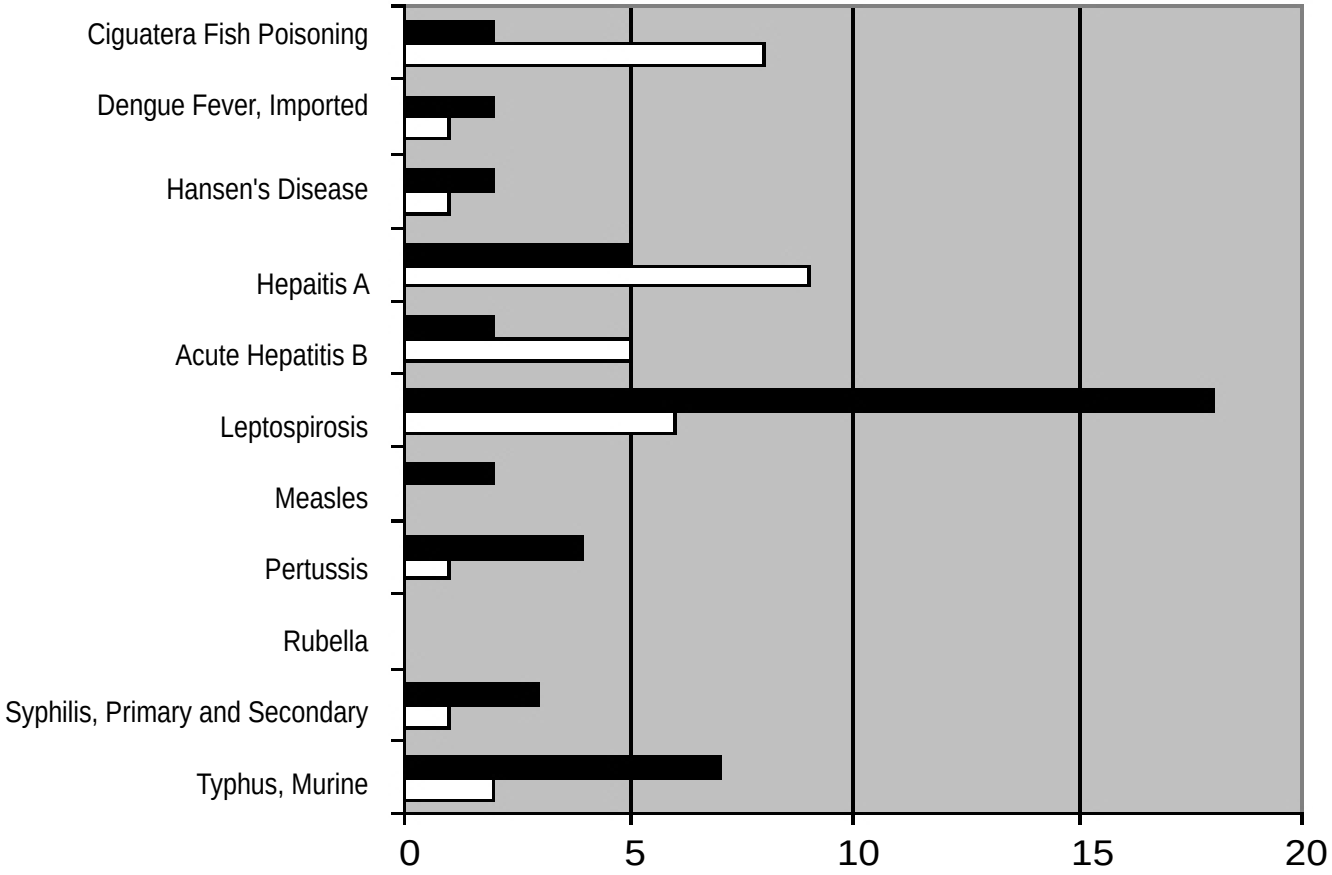
Communicable Disease Surveillance

Selected Diseases by Year of Report*
Hawaii, 2004 Year-to-date through March





* These data do not agree with tables using data of onset or date of diagnosis.
** The number of cases graphed represent 10% of the total number reported